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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,885	07/20/2004	Sou Kuroiwa	042600	6564
<div>38834 7590 01/28/2008 WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP 1250 CONNECTICUT AVENUE, NW SUITE 700 WASHINGTON, DC 20036</div>				
			<div>EXAMINER WEINSTEIN, LEONARD J</div>	
			<div>ART UNIT 3746</div>	<div>PAPER NUMBER</div>
			<div>MAIL DATE 01/28/2008</div>	<div>DELIVERY MODE PAPER</div>

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/501,885

Applicant(s)

KUROIWA ET AL.

Examiner

Leonard J. Weinstein

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the amendment of November 16, 2007. In making the below rejections and/or objections the examiner has considered and addressed each of the applicant's arguments.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-2, and 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kajiwara 5,256,033 in view of Lovisetto EP 55426, and further in view of Kajiwara et al.

5,318,403. Kajiwara '003 teaches all the limitations as discussed for a multistage pump having a plurality of intermediate casings including: a plurality of intermediate casings each having a cylindrical side portion 21, a stage flat portion 27 with which an axial end face 28 of an adjacent intermediate casing 20 is held in contact, a stage side portion 25 extending axially from said stage flat portion 27, and a bottom portion 24 extending radially inward from said stage side

portion 25, a relief plate 33 attached to said bottom portion 24 of the intermediate casing 20, and the relief plate 33, stage side portion 25, stage flat portion 27, and inner surface 23 of the cylindrical side portion 21 of an adjacent intermediate casing 20 form a space, a return vane 32 interposed between a side plate 34 and said relief plate 33 is formed integrally with said relief plate 33, figure1; and a relief plate 33 attached to said bottom portion 24 at a position near its outermost portion 29 so as to form a gap 30 between a radially inner portion, area of element 33 below 29, of said relief plate 33 and said bottom portion 24 of said intermediate casing 20 according to an amount of deformation of the bottom portion 24 due to a differential pressure between stages (Kajiware – col. 4 ll. 21-32). Kajiware '033 fails to teach the limitation that is taught by Kajiware '403 wherein an O-ring 31 fitted in a space formed by a stage side portion 25, stage flat portion 27, and inner surface 23 of the cylindrical side portion 21 of an adjacent intermediate casing 20. It would have been obvious to one having ordinary skill in the art to provide an O-ring between stages of a multistage pump to improve reliability of seals between pump stages (Kajiware '403 – col. 2 ll. 10-14; ll. 28-30). Further Kajiware fails to teach the following claimed limitation that is taught by Lovisetto for a multistage pump 1 with intermediate casings 2 and a plate 12 having an outer circumferential end face 18 which is held in contact with an inner surface 13 of a cylindrical side portion 11 of an adjacent intermediate casing 2 (Lovisetto – Figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the relief plate of Kajiware to be attached to an inner surface of a cylindrical side portion as taught Lovisetto, to reduce the number of component parts in an intermediate casing and simplify its assembly (Lovisetto pg. 2 ll. 11-15).

5. Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kajiware 5,256,033 i. v. Lovisetto EP 55426 and Kajiware US 5,318,403. A combination of the references

as discussed teaches all the limitations for a multistage pump having a plurality of intermediate casings but fails to teach the following limitation that is taught by disclosure of prior art in figure 3 of Kajiwara '033 teaches multistage pump provided with a return vane 7 having a height at an outer circumferential side that is larger than a height of an inner circumferential side. Kajiwara also teaches that this design reduces deformation of the bottom wall of an interstage case while avoiding an increase in thickness. It would have been obvious to combine a relief plate having an outer circumference with a larger height than a height of inner circumference with a relief a partition able to deform within a given limit (δ) in order to provide a interstage casing having a thinner bottom wall (Kajiwara '033 – col. 2 ll. 36-46).

Response to Arguments

6. Applicant's arguments filed November 16, 2007 have been fully considered but they are not persuasive.

7. With respect to the rejection of claims 1, 2, 4 and 5 the applicant argues that a combination of Kajiwara '033 and Lovisetto would not teach a relief plate having an outer circumferential end face held in contact with an adjacent casing. The applicant also argues that.

8. In response to applicant's argument that a combination of Kajiwara '033 with Lovisetto and Kajiwara '403 would not teach a relief plate having an outer circumferential end face held in contact with an adjacent casing, the examiner disagrees. The examiner notes the applicant's argument that the partition member 12 of Lovisetto corresponds to a bottom wall 24 of Kajiwara '033, but respectfully disagrees. The casing element of 11 of Lovisetto corresponds to the interstage casing 20 of Kajiwara which, going left to right with reference to figure 2 (Lovisetto), forms a space where an O-ring 14 is fitted between a raised region 18 of an adjacent interstage casing and a retainer segment 15 (ring-like tooth). The "ring-like tooth" 15

corresponds to the bottom plate 24a of Kajiwara '033 because it is in affect part of the front end of a single interstage casing 20 formed by bottom wall 24. As such Lovisetto teaches a partition member 12 that extends from a raised portion 18 which would correspond to the portion of element 20 near end surface 22 (Kajiwara '033) of an interstage casing 20' disposed adjacent to, either in front of or behind the interstage casing 20 which is shown in figure 1 of Kajiwara '033. The designation of 20' used here to differentiate between element 20 which is shown, and another interstage casing of the exact structure that would be disposed in front of or behind that which is shown. In affect a combination of Kajiwara '033 and Lovisetto would teach a modification that would amount to moving a side plate 33 (Kajiwara '033) to be formed near an end surface 22' of an interstage casing 20' instead of extending from a front end (as constituted by element 24) of element 20 shown in figure 1. Lovisetto clearly teaches a partition which extends from element 18 formed on the back end of a casing 11. This teaching is relied upon by the examiner to make a modification to Kajiwara '033 in view of Lovisetto. It is further noted by the examiner that forming a side plate 33 (Kajiwara '033) near an end surface 22 on an interstage casing 20 would amount to a rearrangement of parts. Rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70. The case cited by the examiner in this paragraph is only being used in response to applicant's arguments and does not constitute new grounds for rejection.

9. With reference to applicant's argument that a combination of the references would fail to teach a structure including a space in which an O-ring is placed and is formed by a relief plate, the examiner disagrees. Both Kajiwara '403 and Lovisetto teach a space for an O-ring, however Kajiwara '403 is cited as evidence that a modification would be obvious. Kajiwara '403 discloses an invention having a common inventor to and patented after Kajiwara '033. Both

inventions disclose an interstage casing but Kajiwara '403 teaches a space 26 formed for receiving an O-ring which is not taught in the prior patent. The addition of an O-ring to similar interstage casing is an obvious improvement over the prior patent to provide a means for sealing between stages of a pump (Kajiwara '403 - col. 2 ll. 28-30). A combination of the Kajiwara '033 and Lovisetto as discussed would provide a relief plate on an adjacent interstage casing formed in front a space accommodating an O-ring as taught by Kajiwara '403.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard J. Weinstein whose telephone number is (571) 272-9961. The examiner can normally be reached on Monday - Thursday 7:00 - 5:30.

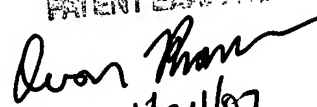
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Karmer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


LJW

DEVON C. HERNANDEZ
PATENT EXAMINER

1/24/07